CLAIMS: *The following is a listing of all claims as amended with their status and the text of all active claims.*

1) (CURRENTLY AMENDED) Product comprising an "entangled" sample containing at least one sort of excited isomer nuclides in which at least one said sort of excited isomer nuclides has at least one metastable state being able of deexciting by emitting gamma rays, called hereafter deexcitation gamma rays, characterized in that the measurable half-life, called thereafter the "variable" half-life, on at least one said sort of excited isomer nuclides of said "entangled" sample, during its natural deexcitation producing said deexcitation gamma rays, is variable, the initial said "variable" half-life of the aforesaid sort of excited isomer nuclides being strictly lower than the constant half-life of the corresponding normal sort of metastable isomer nuclides, said constant half-life thereafter being called the theoretical half-life, and the value of the said "variable" half-life of the aforesaid sort of excited isomer nuclides varying from the value of the said initial "variable" half-life to the value of the said theoretical half-life, then being higher than the value of the aforesaid theoretical half-life, except where said sort of excited isomer nuclides is Niobium (99Nb41m).

2) (CURRENTLY AMENDED) Product comprising an "entangled" sample according to claim 1 ~~containing at least one sort of excited isomer nuclides in which at least one said sort of excited isomer nuclides has at least one metastable state being able of deexciting by emitting gamma rays, called hereafter deexcitation gamma rays, characterized in that the measurable half-life, called thereafter the "variable" half-life, on at least one said sort of excited isomer nuclides of said "entangled" sample, during its natural deexcitation producing said deexcitation gamma rays, is variable, the initial said "variable" half-life of the aforesaid sort of excited isomer nuclides being strictly lower than the constant half-life of the corresponding normal sort of metastable isomer nuclides, said constant half-life thereafter being called the theoretical half-life, and the value of the said "variable" half-life of the aforesaid sort of excited isomer nuclides varying from the value of the said initial "variable" half-life to the value of the said theoretical half-life, then being higher than the value of the aforesaid theoretical half-life,~~ wherein said sort of excited isomer nuclides is Niobium (93Nb41m), Cadmium (111Cd48m), Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin

(117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

3) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample comprises said excited nuclei of at least one kind of said excited isomer nuclides being radioactive isotopes.

4) (UNCHANGED) Product according to claim 2 further characterized in that said "entangled" sample, comprising said sort of excited isomer nuclides, is in any physical or any chemical form, for example in the form of solid in sheet or powder, or in the form of fluid or gas.

5) (UNCHANGED) Product according to claim 2 further characterized in that said "entangled" sample is in the form of alloys, mixtures, or chemical compounds incorporating a proportion of excited nuclei from one or several of aforesaid excited isomer nuclides.

6) (CANCELLED)

7) (CANCELLED)

8) (UNCHANGED) Product according to claim 2 further characterized in that said "entangled" sample contains excited nuclei from at least two sorts of said excited isomer nuclides.

9) (UNCHANGED) Product according to claim 2 further characterized in that said "entangled" sample contains excited nuclei from at least one sort of excited isomer nuclides in at least two said metastable states.

10) (CURRENTLY AMENDED) Manufacturing process of a product comprising of an "entangled" sample characterized in that one prepares a product comprising of a sample containing at least some nuclei of at least one sort of isomer nuclides having at least one metastable state, ~~chosen among Niobium (93Nb41m), Cadmium (111Cd48m), Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m),~~ by irradiation by means of gamma rays comprising at least some groups of entangled

gamma rays, at least some of said groups of entangled gamma rays being of a sufficient energy to excite some of said nuclei of said isomer nuclide to at least one said metastable state, the excited isomer nuclei that are produced being qualified in the continuation as excited isomer nuclide of said "entangled" sample, except where said sort of isomer nuclides is Niobium (99Nb41).

11) (UNCHANGED) Manufacturing process according to claim 10 further characterized in that the measurable half-life, called thereafter the "variable" half-life, on at least one aforesaid excited isomer nuclide of aforesaid "entangled" sample, during its natural deexcitation producing deexcitation gamma rays, is variable, the initial said "variable" half-life of the aforesaid excited isomer nuclide being strictly lower than the constant half-life of the corresponding normal metastable isomer nuclide, said constant half-life also being called the theoretical half-life, said initial "variable" half-life varying with the duration of said irradiation and / or with the power of said irradiation.

12) (CURRENTLY AMENDED) Method to irradiate the environment of the "entangled" sample according to claim 1 ~~2~~ characterized in that one employs the aforementioned deexcitation gamma radiation, emitted by natural deexcitation of the aforementioned "entangled" sample, as a source initially emitting a high dose of radiation, then a decreasing dose, and followed by a low dose of radiation for a long time.

13) (UNCHANGED) Method according to claim 12 further characterized in that the aforesaid "entangled" sample deexcitation gamma radiation is used to conduct one or more physicochemical reactions.

14) (UNCHANGED) Method according to claim 12 further characterized in that one employs the aforesaid "entangled" sample in the form of a solution.

15) (UNCHANGED) Method according to claim 12 further characterized in that one employs the aforesaid "entangled" sample after having undergone a physical transformation or a chemical conversion following its manufacture.

16) (UNCHANGED) Method according to claim 12 further characterized in that the aforementioned deexcitation gamma radiation comprises at least two lines of different energies emitted by at least two aforesaid excited isomer nuclides to irradiate the environment of said "entangled" sample.

17) (UNCHANGED) Method according to claim 12 further characterized in that the

aforementioned deexcitation gamma radiation comprises at least two lines of different energies emitted by the same aforesaid excited isomer nuclide to irradiate the environment of said "entangled" sample.

18) (WITHDRAWN) Use according to claim 12 further characterized for a medical treatment.

19) (UNCHANGED) Product according to claim 2 characterized in that groups of two or several excited nuclei of the aforesaid excited isomer nuclides of the aforesaid sample, are entangled between them and presenting quantum coupling between some of the excited nuclei of the aforesaid excited isomer nuclides.

20) (UNCHANGED) Manufacturing process according to claim 10, in which some of the excited isomer nuclei, that are produced, result from the aforementioned groups of entangled gamma rays, which excite and transfer their entanglement to some of the aforementioned nuclei of the aforesaid isomer nuclide, thus producing groups of excited isomer nuclei.

21) (UNCHANGED) Manufacturing process according to claim 10 in which the aforementioned groups of entangled gamma rays are produced by a radioactive source of gamma rays, each said group of entangled gamma rays being emitted in a cascade from a single nucleus.

22) (UNCHANGED) Manufacturing process according to claim 10 in which the aforementioned groups of entangled gamma rays are produced by a generator of gamma rays coming from the Bremsstrahlung of accelerated particles.

23) (UNCHANGED) Manufacturing process according to claim 22 in which the aforementioned accelerated particles are electrons.

24) (UNCHANGED) Manufacturing process according to claim 22 in which the aforementioned accelerated particles are alpha particles, or protons.

25) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Niobium (93Nb41m).

26) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Cadmium (111Cd48m).

27) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer

nuclides is Cadmium (113Cd48m).

28) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Cesium (135Ce55m).

29) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Indium (115In49m).

30) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Tin (117Sn50m).

31) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Tin (119Sn50m).

32) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Tellurium (125Te52m).

33) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Xenon (129Xe54m).

34) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Xenon (131Xe54m).

35) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Hafnium (178Hf72m).

36) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Hafnium (179Hf72m).

37) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Iridium (193Ir77m).

38) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Iridium (193Ir77m).

39) (UNCHANGED) Product according to claim 2 in which said sort of excited isomer nuclides is Platinum (195Pt78m)

40) (UNCHANGED) Method to irradiate according to claim 12 wherein the aforementioned "entangled" sample has been prepared from a sample containing at least some nuclei of at least one isomer nuclide having at least one metastable state, by irradiation by means of gamma rays comprising at least some groups of entangled

gamma rays, at least some of said groups of entangled gamma rays being of a sufficient energy to excite some of said nuclei of said isomer nuclide to at least one said metastable state, producing the aforementioned excited isomer nuclei.

41) (NEW) Manufacturing process according to claim 10 in which said sort of isomer nuclides is chosen among Niobium (93Nb41), Cadmium (111Cd48), Cadmium (113Cd48), Cesium (135Ce55), Indium (115In49), Tin (117Sn50), Tin (119Sn50), Tellurium (125Te52), Xenon (129Xe54), Xenon (131Xe54), Hafnium (178Hf72), Hafnium (179Hf72), Iridium (193Ir77), or Platinum (195Pt78).

42) (NEW) Manufacturing process according to claim 41 further characterized in that the measurable half-life, called thereafter the "variable" half-life, on at least one aforesaid excited isomer nuclide of aforesaid "entangled" sample, during its natural deexcitation producing deexcitation gamma rays, is variable, the initial said "variable" half-life of the aforesaid excited isomer nuclide being strictly lower than the constant half-life of the corresponding normal metastable isomer nuclide, said constant half-life also being called the theoretical half-life, said initial "variable" half-life varying with the duration of said irradiation and / or with the power of said irradiation.